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P A P E R S
IN
P O L I T E A R T S.

No. I.

NEW MODE OF APPLYING BLACK LEAD IN
DRAWINGS.

*The SILVER ISIS MEDAL was this session presented to
Mr. C. GALPIN, of Charmouth, Dorset, for his new
mode of applying Black Lead in Drawings. Specimens
of the same have been placed in the Society's
collection.*

Charmouth, Dorset,

Feb. 10, 1826.

SIR,

I BEG the favour of your submitting to the inspection of
the Society of Arts, &c. the *drawings* sent herewith, being
specimens of a new process of my invention of applying
black-lead to the general purposes of drawing; and also
the *impressions*, produced by the same material, as a sub-

stitute for copper-plate engraving, and the prevention of forgery.

I am, Sir,

A. Aikin, sq.

&c. &c. &c.

Secretary, &c. &c.

C. GALPIN.

Having, in common with, I believe, all admirers of drawing in black-lead pencil, long regretted that a material of such a natural and pleasing neutral colour should be confined to the tedious process of producing broad gradations of shade, by means of a laborious repetition of lines or touches, I commenced about two years ago a series of experiments, with a view of producing a breadth of touch and effect equal to oil painting, supposing it to be executed in a neutral tint corresponding with the colour of black-lead; but I found, after indefatigable labour, that the granular separation of that material, when applied to paper, rendered it impossible, although I remained satisfied that it would be superior to any other material for the general purposes of drawing if this impediment could be removed: and about two months ago, considering I had only heretofore applied the material in its natural state, I resumed the pursuit, by reducing it to an impalpable powder, and using it with a brush, palette, &c., and the result has been the most complete success, by a process exceedingly easy and simple, by which every possible degree of shade can be produced with the nicest uniformity of tint, when necessary, and in less than a twentieth part of the time required in the ordinary manner, with an apparatus which does not exceed the cost of one shilling, consisting of a small piece of fine muslin, filled with dark black-lead, reduced to fine powder (and tied up similar to bladder colours used by artists),

which I have called a *shader*; a *palette*, made of thick card-board; and a *brush* (such as is used by artists in oil) of medium size.

Process.—The shader is rubbed two or three times on the palette, near one extremity, by which a small portion of the lead is sifted as it were through the muslin; the brush is passed round in the pulverized lead, and on some other part of the palette, to adjust the shade required; the brush is then applied to the paper, to produce a sky or other expanse of shade, with a circulating motion. A sky which before this invention has taken me six or eight hours, I now execute in as many minutes, and with what effect the Society will judge from the drawing marked No. 4, on the top margin.

The sea is produced in those marked Nos. 1 and 2, by the pith of the common elder, the wood of which is cut away so as to expose the pith to the touch, which on being applied to the palette, and then to the paper, produces a beautifully soft and gradual touch. In the tempestuous sea of No. 3, the brush is used after the shades are inserted with the pith.

From the beautifully uniform tint produced by the brush and pulverized lead, I was led so try the possibility of applying it to useful ornamental purposes, by means of the process of stencilling. With what success I have effected this, the Society will judge from the specimens which accompany this communication.

The figures or patterns are cut out in thin card; one of these being laid on the paper, the brush, previously charged with black-lead, is passed over it with a circular motion, and an impression, or rather copy of the figure, is produced.

Complicated ornaments may be produced by the successive application of two or more figures on the same ground, or by moving the pattern a little, and then producing a second copy, which will mingle with and modify the first. Both these methods even might be combined, if a very complicated figure, difficult of imitation, was wanted.

I beg particularly to remark to the Society, that my principle of producing skies can be adopted by any without interfering with their general style of drawing, and is so exceedingly easy that a novice cannot fail of producing a tolerable effect. I have received several applications from amateurs (who have presumed I used Indian ink), to ascertain how I produced my skies so rapidly, but I have not yet communicated my process to any individual, from the hope that the Society will so far consider my invention an acquisition to the arts as to give it a place in their volume of Transactions, and I beg leave to add ; that it would be highly gratifying to my feelings to have it first made public through so distinguished a source ; and I shall feel happy to give the Society any further information on the subject.

C. GALPIN.

SIR,

Charmouth, March 11, 1826.

I beg permission to inform you, that since I communicated to your Society my process of drawing in black lead (which you did me the honour to inform me was referred to the consideration of a committee), I have discovered that common powder black-lead fully answers the purpose ; and trusting such a step may not be irregular, I have sent a few specimens, drawn with common lead in powder, such

as is used for domestic purposes, together with a specimen of my drawing a few months previous to discovering my new process, which, with a few observations on the materials before described, I will thank you to cause to be placed in the portfolio containing my first specimens, for the inspection of the Committee, and you will additionally oblige,

Sir,

Your's, &c.

A. Aikin, Esq.

Secretary, &c. &c.

C. GALPIN.

Sir,

Charmouth, March 29, 1826.

I beg leave to inform you, that since I last took the liberty of addressing you on the subject of my application of pulverised black lead to the purposes of drawing, &c., it has been applied in the delineation of architecture and figures with such singular success, that I am induced to trouble you with a few additional specimens for the inspection of the Committee, when it comes under their consideration, which I will thank you to be caused to be placed in the folio containing my former specimens.

The device of "Hercules encountering the Hydra" was intended to have been engraved on copper-plate, and one hundred copies were required, which I have supplied with black lead, with the most complete satisfaction.

In architecture it has proved exceedingly useful in producing a number of copies of the same moulding for cornices, required to be put into the hands of different workmen, which matched with the utmost precision when brought together in the course of building. In any number of copies of

sections it is impossible there can be the least variation, and the sharpness with which the outline is defined renders it particularly applicable to this purpose.

I have supplied two architects of this neighbourhood with sections of mouldings and architectural ornaments, at the rate of four copies per minute, with common black lead.

I think I omitted to mention, that the common black lead is ground in water on a stone in the manner of ordinary paint, dried before the fire or in an oven, and again reduced to powder in a mortar, then tied up in muslin as described in my first communication: in the space of ten minutes a sufficient quantity may be prepared to supply the constant application of three months.

I beg leave also to add, for the information of your Committee, that since my first communication to your Society (viz. about the 10th of February) I have drawn forty views, seventeen architectural elevations, and taken off more than three hundred impressions, without having used two pennyworth of black lead.

Trusting I have not committed an impropriety in again troubling you with specimens,

I beg to remain, Sir,

A. Aikin, Esq.

Secretary, &c. &c.

&c. &c. &c.

C. GALPIN.

SIR,

Charmouth, May, 12, 1826.

Permit me the honour of requesting you to be the medium of conveying to the Society of Arts, &c. my most grateful thanks, for the distinguished mark they have been

pleased to bestow of their approbation of my mode of applying black lead in drawings.

I have also to beg that you will do me the favour of stating my perfect acquiescence in the conditions which are contained in your letter of the 5th instant, and I have the pleasure of adding a full description of my process.

I am, Sir,

A. Aikin, Esq.

&c. &c. &c.

Secretary, &c. &c.

C. GALPIN.

The materials used by me in executing drawings in black lead are three brushes, made of badgers' hair, similar to those used by painters in oil-colours, and denominated softeners, except being only one-third of the length of ordinary softeners in the hair; the largest brush is one inch in diameter, the second three-eighths, and the smallest one-eighth of an inch in diameter. A palette of ordinary size, made of thick card paper. The pith of common elder tree, dried naturally*; and two small muslin bags, filled with pulverized black-lead†.

* The pith used by me is that of the most luxuriant saplings of the common elder tree, which decay and become dry naturally, and may be collected during the months of January and December. The thin wood in which the pith is inclosed answers the purpose of a portcrayon in using it.

The idea of applying this material to the purpose in question suggested itself to my mind whilst seeing an electrical experiment with figures cut out of the same material, and which I found to possess all the necessary qualities which I had been for a long time seeking in vain.

† The best dark black lead is merely reduced to fine powder, and placed in the muslin; but common black lead requires to be

If the drawing is intended to have a marginal termination, a frame of thin card-paper is placed on the paper or card which is to receive the drawing, to protect the margin and determine the size and shape of the same; but if the drawing is intended to have a vignette finish, no frame is required. To proceed with the sky, the bag containing the pulverized lead is passed two or three times over a part of the palette, when a small portion of the lead will be sifted through the muslin; the largest brush is applied to the leaded part of the palette, and then to the drawing, beginning at the top, and proceeding to the horizon with a light circular motion, when a beautifully delicate shade will be produced; the clear expanse is first done, leaving the lights for clouds, if any are intended to be introduced, the dark parts of which are done by charging the brush with more lead from the palette: in exceedingly delicate skies the brush should be passed two or three times over the unoccupied part of the palette, to adjust and regulate the tint before applying it to the drawing.

Skies, distances generally, smoke, smooth water, and accidental vapour, are produced and finished with the brushes alone; and the intervention of atmosphere in the distance is given by the largest brush passing over the whole, slightly charged with lead. Every expanse of dark, of whatever degree, is then brushed in, and the particular characters of surface, texture, &c., of objects given by the pith where it applies, which, being cut in a shape favourable to

ground in water on a stone (in the manner of ordinary paint), dried and pulverized, when it is put in muslin for use. The common lead is used in the darkest, and the best lead in the lightest parts of the drawing, at the discretion of the performer.

the particular touch required, is applied to the palette in the same manner as the brush, when a portion of the lead is taken up in its pores, which on being applied to the drawing is gradually given out, producing a natural uniform touch, which may be repeated several times when a succession of such touches is required, without being again applied to the palette. Agitated and tempestuous sea is executed entirely with the pith, and the aerial indistinctness of distance given by the brush.

Objects near the foreground, requiring a particular sharp or rough character, in addition to the shading produced by the brushes, are finished with a black lead crayon over the shading previously brushed in. Where a particularly abrupt termination is required to a shade, a piece of card of a suitable shape is held in the left hand on the drawing during the operation of the brush, to protect the light and give the required sharp finish to the shade.

When a number of copies of the same subject are required, the definite shades are produced first, with the brushes, through corresponding apertures cut in three or four guides, made of thin card, of the precise size of the drawing, beginning with the darkest, and including the last in each succeeding guide: the apertures in the guides comprise the principal masses of shade, and the lights are protected by the intervening parts. Particular care is taken not to shade too close to the boundary of any aperture in the guides (except a sharply defined outline be required), by which the harmony and consistency of the whole would be interrupted in the finish.

The principal masses of dark having been brushed in through the guides, the marginal frame is placed on the

drawing, which next receives the sky and finishing with the brushes, &c., as first described.

C. GALPIN.

P. S. This statement contains several trifling improvements since my communication to the Society, particularly the use of three brushes.

The Society will please to retain any of the specimens in their possession which they may think proper.

No. II.

ELASTIC MOULDS FOR CASTING IN.

The LARGE SILVER MEDAL was this session presented to Mr. DOUGLAS FOX, of Derby, surgeon, for his Elastic Moulds for Casts in Wax or Plaster of Paris. The following communication has been received from the Candidate on the subject, and specimens of his casting have been placed in the Society's collection.

SIR,

Derby, April 5, 1826.

If you would have the kindness to transmit the inclosed paper, together with the specimen, cast in plaster of paris, to the Society for the encouragement of Arts, Manufactures, and Commerce, you will much oblige,

A. Aikin, Esq.

Sir, your's, &c.

Secretary, &c. &c.

DOUGLAS FOX.